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Thomas Say

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CONTENTS:

Quaintance—On the life-history of Brachytarsus alternatus 1
Calvert—Notes on European entomological collections..... 4
Castle and Laurent—April collecting in Georgia and Florida..... 7
Editorial..... 10
Economic Entomology 11
Notes and News..... 12
Entomological Literature..... 15
Doings of Societies..... 19
Entomological Section..... 22
Ashmead—Nitelopterus, a new Larrid genus 22
Cockerell—Some species of Perdita from Nebraska..... 23

ON THE LIFE-HISTORY OF BRACHYTARSUS ALTERNATUS.

By A. L. QUAINTANCE, Lake City, Fla.

During a study of insects injurious to stored grain carried on the present year, this species of Anthribid was found to be quite abundant in certain localities in the State, feeding both in the larval and adult stages on stored corn-cow-peas and English peas.

As the early stages and food habits of this beetle have not previously been recorded, and as larvæ of the genus *Brachytarsus* have been supposed to be parasitic on scale insects, it may be of interest to note some observations that have been made on this insect.

DESCRIPTION.

Eggs.—Length .583 mm.; width .366 mm.; shape elliptical; color clear yellowish white; smooth, showing no markings; slightly adhesive.

Full-grown larva.—Length 5 mm.; width at third segment 2 mm.; width of head at base 1 mm.; width of mouth .2 mm. Body very thick and stout, subcylindrical, being flattened somewhat on ventral surface; tapering, slightly cephalad and caudad; caudal end rather bluntly rounded.

The larva is footless and quite thickly covered with hairs. The ventral surface of each thoracic segment is somewhat swollen and more densely hairy than elsewhere on the body, with many of these hairs longer than the others. General color whitish, with slight yellowish tinge. Head white, labrum and mandibles yellow, tips of mandibles black; the skin is much wrinkled and folded as illustrated in figure *a*. Eight spiracles are plainly to be observed; the thoracic segments show but one spiracle, which is situated in the fold between the first and second segments. On the lateral aspect, near the middle of each of the first seven abdominal segments, is situated a spiracle just above an oblique fold in the skin. See figure *a*.

Pupa.—Length 5.5 mm.; width of head just cephalad of eyes .85 mm.; width of body across the mesothorax 2 mm. Color white throughout except the eyes, which are brownish. Head is bent down against the ventral surface of the prothorax; each segment is marked with two pairs of rather prominent lines, the lines of each pair curving in, meeting each other at the distal extremity of the wing-cover. The distal end of each elytron bears an outward curved, brownish colored hook; numerous hairs are distributed over the abdomen, dorsal part of the thorax and the head. Under a two-thirds objective, the skin is seen to be thickly covered with minute spine-like protuberances.

In all specimens examined the cast larval skin remains quite firmly attached to the caudal part of the abdomen. See fig. *b*.

Adult.—"Robust, elytra with a series of alternate gray and black spots. Body short and thick, densely hairy, brownish cinereous; head plane not prominent between the eyes; antennæ moderate, pale rufous, three last joints fuscous, thorax with a few black spots, elevated line of the posterior margin not prominent, placed near and parallel to the posterior edge; elytra with punctured striæ, alternate interstitial lines, with alternate black and gray spots; feet rufous; thighs dusky; tibiæ with about two dusky bands. Length three-twentieths of an inch." See figure *c*.

LIFE HISTORY NOTES.

Abundant specimens were secured and brought to the laboratory for study. Specimens were placed in several different glass jars and uninfested corn or cow-peas were supplied them. In two bottles containing four specimens each, were placed a few

grains of corn. In each of the three test tubes a single female was placed and supplied with a kernel of corn. All of these were kept under as close observation as other work permitted.

Eggs remained for some time undiscovered, and a close watch failed to detect the manner of oviposition, although young larvæ were easily to be found in seeds upon which the adults were feeding. However, upon examining some of the excrement, and particles of half digested food, elliptical shaped bodies were to be found, which, from their color and structure, appeared to be eggs. By the use of iodine these could be readily separated from the starchy excreta, and were found to be somewhat numerous, and usually present in the accumulations on the bottom of the jar. Later, undoubted eggs were found loosely placed on the bases of kernels of shelled corn. By a comparison of these with those previously mentioned no doubt was left as to the presence of eggs in the excreta. Their occurrence in the excreta is possibly accidental. While oviposition was not observed, it seems probable that in the case of corn in the ear, eggs are placed down in the crevices between the kernels. In nearly all of the instances that were observed, the larvæ entered the grain of corn by eating a very small hole through the softer portion at the base. From this point of entrance it eats upwards towards the top of the grain. By the time the top of the grain has been reached the larva is usually about full grown. A larger cavity is eaten, quite out to the hull above, and the pupa state is entered. Upon the development of the adult from the pupa it is quite soft and of a rust-red color. It slowly changes color, and the skin becomes harder, until at the end of about forty-eight hours it presents its normal appearance. Escape is made by gnawing through the thin hull; but one larva occupies a single kernel of corn.

An infested grain appears quite sound until about the time the pupal stage is reached, when the cavity at the top of the grain may be detected through the thin hull. In feeding on corn the adults show no apparent preference for any particular part of the grain. Of the seeds found infested, corn seems to be the favorite food. The life cycle requires about six weeks for completion; in some cases seven weeks were required.

Mr. E. A. Schwarz kindly determined this beetle for me.

NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT.

XI.—MILAN.

The Museo Civico di Storia Naturale di Milano, in a new building in the Public Gardens of that city, has for Director Prof. Tito Vignoli; the Section of Zoology and Comparative Anatomy is in charge of Prof. Angelo Andres. Prof. Ferdinando Sordelli, Assistant in Entomology, has kindly supplied some notes on the collection of insects:

The Museum, founded in 1838, and whose nucleus was the collections of Prof. Georges Jan and of Joseph De Cristofori, a Milanese nobleman, was opened to the public for the first time in September, 1844. Among these collections was also one of Insects of all orders, especially rich in Coleoptera. At this epoch, Jan and De Cristofori were in exchange with many entomologists and their collections had acquired thereby a certain importance. Having become the property of the city, the care demanded by the other collections of the Museum, especially those of recent and fossil Vertebrata, and the insufficiency of the personnel, which one deplores even at this day, did not permit of the extension of the entomological collection, although it has been enriched by those of Abbé Marietti, of Galeazzi, and by a part of that of the brothers Villa. A numerous series of Coleoptera and a small selection of genera of the other orders were exposed to public view. At present, since the Museum has been installed in its new edifice, owing to lack of space, no part of the collection is accessible to the general visitor.

The insects are all preserved in boxes with glass tops, filling a dozen cabinets; the papered bottom of each box rests upon sorghum pith, or more rarely upon cork. The specimens, of which the greater part is still in quite good condition, are almost all determined, but the progress of Entomology during the last half century leaves much to be desired in the way of new studies and of fresh material.

With the exception of some manuscript catalogues, very few documents bearing on the collection exist. A catalogue of Coleoptera was published in 1832 by Prof. Jan under the title "Catalogus in IV Sectiones divisus rerum naturalium in Museo

extantium Josephi De Cristofori et Georgii Jan, etc. Sectio III, fasc. 1, Coleoptera."

Quite recently, after the death of Gaetano Osculati, the Museum has inherited a small collection of Coleoptera which this traveler had made in Italy and in some countries of the Orient. It contains, among others, a part of the Coleoptera enumerated by him in the brochure "Note di un viaggio nella Persia e nella Indie Orientali negli anni 1841, 1842 da G. Osculati. Coleopterorum enumeratio quae ad Persiam et Indias orientales itinere a Gajetano Osculati collecta novarum specierum descriptionibus adjectis. Modoetia [= Monza] 1844."

XII. MUNICH.

In the building on Neuhauser-strasse, Munich, where are associated the Königliche Bayrische Akademie der Wissenschaften und Generalkonservatorium and the Zoological Institute of the Königliche Bayrische Ludwig-Maximilians Universität, is a collection of insects. Herr Hindlmayr, curator, informed the writer, on the occasion of his visit there, that the only important specimens are the types of the Coleoptera collected in Brazil by Spix and Martius and described by Perty, and Dr. Kriechbaumer's types of Ichneumonidæ.

XIII. HALLE.

The Zoological Institute of the Vereinigte Friedrichs-Universität Halle-Wittenberg contains entomological collections of much importance. The following notes are drawn up partly from the manuscript catalogues and partly from memoranda kindly furnished by Prof. Ernst Taschenberg, Professor of Entomology, to whom the writer is indebted for many courtesies during several days passed in study there.

COLEOPTERA.

More than 2800 specimens acquired from Prof. Schaum and forming part of Germar's collection; many types of Germar and Schönherr, especially among the Curculionidæ.

Numerous types of Lamellicornia of Burmeister, of the genus *Calopteron* of E. Taschenberg, and Coleoptera from Columbia and Ecuador from the last named.

Schulrath Dr. Suffrian's collection of 35,565 specimens from all parts of the world, which, under the terms of the testament

by which it was acquired in 1876, is preserved separately; a manuscript catalogue in three small quarto volumes exists. Suffrian's own types of Chrysomelidæ and Cryptocephalidæ are here.

HYMENOPTERA.

Types of Chrysididæ of Mocsary; of Nyssonidæ, Crabronidæ, Larridæ, Bembecidæ, Cryptidæ and *Ophion* of E. Taschenberg: of Chalcididæ and Formicidæ of G. Mayr.

LEPIDOPTERA.

The collection of Gerichtsrath Keferstein of Erfurt, acquired by bequest in 1886.

OTHER ORDERS.

Kolenati's types of a few species of *Nycteribia* (Diptera).

E. Taschenberg's types of *Tettigonia* (Rhynchota).

Orthoptera and Neuroptera of almost all families described by Burmeister.

Mallophaga (in alcohol) described by Nitzch and Giebel.

Insects of all orders collected in Teneriffe by Dr. v. Rebeur-Paschwitz.

It may perhaps be not inappropriate to state here that the writer, by permission of Prof. Taschenberg, spent five days (May 26–30, 1896) studying such of Burmeister's types of Odonata as are preserved here. Previous to his visit, none of the presumed types possessed pin-labels indicating their character, but were placed above colored drawer-labels bearing the specific name, a star and the name of the locality, all written in what Prof. Taschenberg stated to be Burmeister's handwriting. After careful study and comparison of these specimens with Burmeister's descriptions, all specimens which seemed to have probably served as types were pin-labeled as follows: "Considered by me as Burmeister's type of his . . . [here the name of the species]. P. P. Calvert, May, 1896." Of the ninety-eight species of Odonata described as new by Burmeister, types of thirty-eight are now in Halle. Types of at least some of the remaining fifty, according to a letter from Mr. Samuel Henshaw, are now in the late Dr. Hagen's collection, in the Museum of Comparative Zoology, Cambridge, Mass. The writer hopes to say in the future something further on Burmeister's Odonata.

APRIL COLLECTING IN GEORGIA AND FLORIDA.

By Dr. D. M. CASTLE and PHILIP LAURENT.

(Continued from p. 305, vol. vii.)

We left Enterprise on the morning of the 20th, and arrived at our next stopping place, Jacksonville, in the afternoon. The next day was spent in collecting on the outskirts of Jacksonville, where we obtained some interesting material. The 22d we took an early train for Fernandina, which is about thirty-five miles from Jacksonville. The collecting on the ocean front was not of the best, so we retraced our steps to the fields that lie just outside of the town, and here we found excellent collecting. A late train in the evening brought us back to Jacksonville. The 23d we collected in the pine woods and along the banks of the St. Johns River. The electric lights in Jacksonville afforded us an opportunity to add many species which would not otherwise have been captured. During our short stay in the neighborhood of Jacksonville the following captures were made:

ARACHNIDA.

Pencetia viridans *Htz.*
Hamatalina grisea *Keys.*
Anyphæna fragilis n. sp. *Banks.*
Oxyopes salticus *Htz.*
Icius palmarum *Htz.*
Dendryphantes octavus *Htz.*
Phidippus miniatus *Pck.*
Heteropoda venatcoria *Linn.*

ORTHOPTERA.

Anisomorpha buprestoides *Stoll.*

HOMOPTERA.

Smilia camelus *Fab.*
Ophiderma flaviguttata *Germ.*

LEPIDOPTERA.

Papilio ajax *var.* telamonides *Feld.*
" asterias *Fab.*

COLEOPTERA.

Scarites subterraneus *Fab.*
Pterostichus permundus *Say.* ?
" haldemani *Lec.*
Evarthrus americanus *Dej.*
" nonnitens *Lec.* ?
Loxandrus agilis *Dej.*
Platynus crenulatus
Galerita janus *Fab.*
Pinacodera limbata *var.* fuscata *Dej*
Chlænius herbaceus *Chev.*
" erythropus *Germ.*
" niger *Rand.* [*Lec.*
" tomentosus *var.* amplus
Selenophorus ellipticus *Dej.*
Anisodactylus rusticus *Dej.*
" agilis *Dej.*
Laccophilus proximus *Say.*
Bidessus affinis *Say.*
Agabus n. sp.?
Cybister fimbriolatus *Say.*
Hydrophilus ovatus *G.* and *H.*
" nimbatus *Say.*
" striolatus *Lec.*
Hydrocharis castus *Say.*
Berosus pugnax *Lec.*
Atheta sp.?
" sp.?
Quedius capucinus *Grav.*

Philonthus cautus *Er.*
Stenus arculus *Er.*
Pinophilus parcus *Lec.*
Oxytelus insignitus *Grav.*
Chilocorus bivulnerus *Muls.*
Exochomus contristatus *Muls.*
" tripustulata *DeG.*
Brachyacantha ursina *var.* basalis
Cardiophorus florida [*Melsh.*?
Monocepidius lividus *DeG.*
Melanotus insipiens *Say.*
Chalcophora georgiana *Lec.*
Chrysobothris floricola *Gory.*
" chrysœla *Ill.*
Actenodes acornis *Say.*
Agrilus ruficollis *Fab.*
Brachys ovata *Web.*
" " *var.* tessellata *Fab.*
" æruginosa *Gory.*
Atænius strigatus *Say.*
" cylindrus *Horn.*
Trox suberosus *Fab.*
Diplotaxis subcostata *Blanch.*
Polyphylla occidentalis *Linn.*
Cotalpa lanigera *Linn.*
Chalepus trachypgus *Burm.*
Ligyrus gibbosus *DeG.*
Criocephalus nubilus *Lec.*
Elaphidion parallelum *Newm.*
Plectromerus dentipes *Oliv.*
Goes debilis *Lec*
" pulverulenta *Hald.*
Leptostylus aculiferus *Say.*
Liopus cinereus *Lec.*?
Ecyrus dasycerus *Say.*
Eupogonius tomentosus *Hald.*
Hippopsis lemniscata *Hald.*
Chlamys plicata *var.* tuberculata *Kl.*
Bassareus lituratus *var.* vittatus *Suffr.*
Cryptocephalus bivius *Newm.*
" nanus *Fab.*
" schreibersii *Suffr.*
" luteolus *Newm.*
" binominis *Newm.*
Pachybrachys carbonarius *Hald.*
" limbatus *Newm.*
" atomarius *Melsh.*?
Diachus auratus *Fab.*
Myochrous denticollis *Say.*
Metachroma quercata *Fab.*?
Colaspis brunnea *Fab.* [*Dej.*
" " *var.* costipennis
Oedionychis miniata *Fab.*
Haltica ignita *Ill.*
Mantura floridana *Cr.*
Odontota bicolor *Oliv.*
" rubra *Web.*
Chelymorpha argus *Licht.*
Bruchus exiguus *Horn.*
Epitragus tomentosus *Lec.*
Helops cisteloides *Germ.*
Hymenorus communis *Lec.*
Asclera erythrocephala *Germ.*
Epicauta strigosa *Gyll.*
Pterocolus ovatus *Fab*
Attelabus nigripes *Lec.*
Pandeletegus hilaris *Hbst.*
Eudiagogus pulcher *Fab.*
Pissodes strobi *Peck.*
Pachylobius picivorus *Germ.*
Smicronyx n. sp.
Otidocephalus myrmex *Hbst.*
Centrinus picumnus *Hbst.*
" rectirostris *Lec.*
" cenfusus *Boh.*
Anthribus cornutus *Say.*

HYMENOPTERA.

Mutilla dubitata *Beau.*

On the 24th, the Doctor's vacation having expired, he took the train for his home in the North, while his companion continued his journey to Gulf-Hammock on the Gulf coast of Florida. Four days were spent in collecting in the Hammock, when my leave of absence having also expired, I started for home. The following species were collected during my stay at Gulf-Hammock:

ARACHNIDA.

Phidippus miniatus *Pck.*
" otiosus *Htz.*
Theridium stridrosum *Htz.*
Cœlotes sp.?

ODONATA.

Argia apicalis? *Say.*
" fumipennis *Ramb.*
Ischnura ramburii *Selys.*

LEPIDOPTERA.

Agraulis vanillæ *Linn.* [*Strk.*
Limenitis disippus *var.* floridensis
Neonympha eurytris *Fab.*
" sosybius *Fab.*
Catopsilia eubule *Linn.*
Terias nicippe *Cram.*
Papilio ajax *var.* telamonides *Feld.*
" thoas *Linn.*
" asterias *Fab.*
" palamedes *Dru.*
" philenor *Linn.*
Pamphila campestris *Bdv.*
" phylæus *Dru.*
" brettus *Bd.-Lec.*
" otho *S.* and *A.*
" maculata *Edw.*
" fusca *G.* and *R.*
Eudamus proteus *Linn.*
Enyo lugubris *Linn.*
Chœrocampa tersa *Linn.*
Philampelus vitis *Linn.*
Protoparce celeus *Hbn.*
" cingulata *Fab.*
Crocota rubicundaria *Hbn.*
Mamestra laudabilis *Gn.*
Galgula subpartita *Gn.*

DIPTERA.

Tabanus amercanus *Forst.*
" lineola *Fab.*
" fuscopunctatus

COLEOPTERA.

Pasimachus subsulcatus *Say.*
Pterostichus obsoletus *Say.*
Chlænius æstivus *Say.*
Gyrinus minutus *Fab.*
" elevatus *Lec.*
Silpha inæqualis *Fab.*
" americana *Linn.*
Hololepta quadridentata *Fab.*
Hister carolinus *Payk.*
Epierus pulicarius *Er.*
Brachypeplus glaber *Lec.*
Chalcophora virginiensis *Dru.*
Passalus cornutus *Fab.*
Phanæus igneus *MacL.*
Goes debilis *Lec.*
" pulverulenta *Hald.*
Donacia piscatrix *Lac.*
Trirhabda tomentosa *Linn.*
Nyctobates pennsylvanica *var.* barbata *Knoch.*
Tribolium ferrugineum *Fab.*
Epicauta strigosa *Gyll.*
Pachnæus distans *Horn.*
Otidocephalus myrmex *Hbst.*
Conotrachelus pusillus
Eupsalis minuta *Dru.*
Rhynchophorus cruentatus *Fab.*
Phœnicobius chamæropis *Lec.*

During our entire stay in Georgia and Florida not a drop of rain fell, or had any fallen for several weeks previous to our arrival. The weather was excessively hot during the day, but the nights for the most part were cool. To Messrs. Schwarz, Fernald, Hulst, Fox, Calvert, Skinner, Seiss, Banks, Johnson and others, our thanks are due for their kindness in determining a large part of the material collected.

ERRATA.

In the first part of article on April collecting in Georgia and Florida, which appeared in Dec. NEWS, the following corrections should be made.

Lebia viridipennis Dej. should be *Lebia analis* Dej.

Dibolia vincta should be *Diabrotica vincta* Lec.

Lema collaris Say collected at Jacksonville, not at Enterprise.

Colydiidæ nov. gen. n. sp. collected at Enterprise not at Savannah.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., JANUARY, 1897.

WITH the present number we begin volume eight and another mile-post is passed in our entomological journey. Another year has commenced and we wish it may be a very happy one for all of our entomological friends. The NEWS is progressive, and in spite of the trying financial depression of the past two years it will be our effort to grow and improve as in the past. We have made many warm friends in our journey, and we hope we may continue to merit their approval and win new laurels in the field of entomological journalship. We are guided entirely by an unselfish love for our interesting study and have no other motive for existence. On our cover this month we present the likeness of the "Father of American Entomology" who surmounted difficulties unknown to the students of the present day, and his example should encourage all to a renewed effort in the cause of science. He was almost alone in his studies and a pioneer in a field that was often ridiculed, but we can congratulate ourselves at the present day that the value and importance of our study is universally recognized by all intelligent people.

"What are those fellows running around for in that field?"

"Why, they are naturalists."

"Oh, yes! I see, catching gnats."

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

(Continued from page 310, vol. vii.)

Proceedings of the Association of Economic Entomologists.—Mr. Johnson gave some "Entomological Notes from Maryland." He rehearsed the laws of Maryland, relating to insects and plant diseases, which requires among other things, from nurserymen sending stock into the State, a certificate signed by the entomologist of the State in which the stock was grown, that the plants are free from insect pests and plant diseases; an almost impossible certificate to give. The melon plant lice have been bad in half a dozen counties, but he has found the kerosene emulsion diluted twenty times to be a satisfactory remedy. The asparagus beetle is common everywhere, and the potato stalk beetle has done much injury. The cabbage worm and harlequin bug have been unusually abundant and are doing a great deal of harm. The strawberry weevils have been very troublesome, particularly on the Sharpless. The Curculios have been unusually injurious in peaches, and the Codling moth has been more than usually troublesome in pears. The elm leaf beetle has been very abundant, and the locust beetles has been very abundant, and the locust beetle has defoliated many trees in southern Maryland.

Mr. F. W. Webster spoke on "The insects of the year in Ohio." The chief troublesome insects have been the army worm and the chinch bug, and both have been injurious, though requiring different meteorological condition, by the usual combination of weather in 1895 and 1896. Grasshoppers have done much damage to hay and other crops. The harlequin cabbage bug is pushing northward in Ohio at a greater rate than ten miles a year. The egg parasite that has been found doing some good in Louisiana is to be introduced into Ohio. Basket worms were very numerous, and especially destructive this year. The asparagus beetle is moving slowly westward in Ohio. *Odontota dorsalis* has been particularly injurious on black locust this year. The beetle of *Saperda candida* has been found feeding upon apples and doing some injury in that way. *Termes flavipes* has attacked and injured geraniums. The San José scale is not spreading in Ohio, but is being exterminated. It has occurred heretofore on young trees only, and the farmers have been willing to adopt radical measures in every case. The grape root-worm has not yet disappeared, but an egg parasite is beginning to increase considerably, and the probabilities are that this will obtain control of the species in the near future. There is also a mite attacking the eggs. No insecticides that have been used against the insect have been of any practical benefit. *Valgus canaliculatus* was found eating out fruit buds of pears, and leaf buds of apples. *Calasoma calidum* was found in the larval state attacking cut-worms. Clover has been injured by a little Hemipteron, *Halticus bractatus*.

Mr. Slingerland stated that he had bred four specimens of parasites, *Trichogramma pretiosa*, from a single Codling moth egg.

Mr. Fletcher showed an apple with a little undetermined larva working in the flesh, which no one seemed to recognize positively.

Mr. Kellicott had found the harlequin cabbage bug much further north than reported by Mr. Webster. He had also found *Ichthyura* defoliating poplars.

Mr. Marlatt stated that in his experience kerosene applied pure on trees was an excellent way of killing them.

Mr. A. D. Hopkins gave notes on "Some Observations in West Virginia." He said there were but five localities with San José scale, and that it has not spread from the points at which it was introduced, principally on Idaho pears. Cut-worms seem to have been very scarce, probably on account of the number of parasites attacking them. The webworm has been very common and injurious. The cabbage bug has been very troublesome, but can be controlled by using mustard as a trap crop. Blister beetles had been found particularly troublesome on china asters. He had found a little species of *Bruchophagus* feeding on clover seed. This is interesting, because the insect was supposed to be parasitic in its habits, but his observations were carefully made and there seems to be no escape from the belief that the larva of this insect actually feeds upon the clover seed and not upon some other insect larva.

Mr. L. O. Howard spoke of "Steam Spraying Machines," and described a number that were in use at the present time, principally for dealing with shade tree insects in cities and towns. Such machines had not been found satisfactory in orchard spraying, because of the expense involved, but they seem to have proved satisfactory in cities. One of the best of these machines is that used by Mr. E. B. Southwick in New York City and constructed under his direction. A considerable number of photographs were exhibited illustrating the machines spoken of.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.--All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

PICTURE for album of American Entomological Society has been received from Dr. E. Bergroth, of Tammerfors, Finland.

CLYPEADON, new genus (*C. 4-notatus* Ashm.). Female: clypeus edentate, dorsal valve subquadrate, ventral valve bilobate; otherwise as in *Aphilanthops*, but the abdomen shorter. Type *Aph. quadrinotatus* Ashm. Bull. Col. Biol. Assoc. i, p. 7 (1890).—W. H. PATTON.

A FEW days ago my father captured a troublesome fly, and, as he held it, found to his surpise that three Pseudoscorpions had left it and were crawling rapidly over his hand. Upon this more flies were captured and three found infested with Pseudoscorpions. Of fifty flies captured the following day two carried Pseudoscorpions, one had two attached to a single leg. In each case the Pseudoscorpions hung on by a single pincer. —FREDERICK KNAB, Chicopee, Mass.

ANOTHER HONOR.—Societe Entomologique de Russie. St. Petersbourg, Nov. 15, 1896. Sir—Rendering homage to the eminent services which, during a long series of years, you have not ceased to render to entomological science by your distinguished works on agricultural entomology, on the Lepidoptera, the Hymenoptera, etc., the Entomological Society of Russia, in its full session of October 1, have unanimously elected you an honorary member of the society. Having the honor to transmit to you the diploma, which is sent by itself, I hasten to add the expression of my sentiments of esteem and devotion. P. de Semenow, Senator of the Empire, President of the Society.

Professor Alpheus Packard received this letter from Russia announcing his unanimous election to the Entomological Society of Russia. This honor comes as a result of the work published by Professor Packard this year in the Memoirs of the National Academy of Sciences of the United States ("Monograph of the Bombycine Moths of America, North of Mexico").—*Brown Herald*.

WESTWARD.—On August 19th I made a trip to the Cazenovia Creek, about eight miles from Buffalo, with the intention to capture a number of *Cicindela ancocisconensis* to present to the entomologists that might come to Buffalo to attend the forty-fifth meeting of the American Association for the Advancement of Science that met here for the fourth time, from August 24th to 29th. I was somewhat disappointed to capture only one specimen owing, perhaps, to the dryness which had prevailed during this and last season. I however used my umbrella beating willows which grow profusely near the banks of the creek. I was very much surprised to find a number of *Cryptorhynchus lapathi* L. Our lamented friend, Wm. Juelich, had supplied me with a fine set several years ago, which he took near New York and in New Jersey, telling me at the time to be on the lookout for it. This week I went out there again in company with several visiting entomologists and found more of the Curculio, and on close research discovered the holes in the stems of the willows from which the Curculios had emerged. To make proof positive, we cut off some of the willows and found the larva in all stages of life. This shows the rapid spread of this pest. We also found quite a number of *Crioceris*

asparagi Linn. This Chrysomelid has never before been observed in this locality.—OTTOMAR REINECKE, Buffalo, N. Y.

VOL. III, No. 8, of the NEWS gives us the interesting story of the introduction of *Samia cynthia* into Philadelphia. In collecting during the last few years I had my attention drawn to the multitude of larvæ and cocoons of this species found in certain parts of the city. Not more than ten minutes' walk from my residence will bring me to a grove of trees where the Ailanthus is predominant. In this place I have taken, the last two years, over two thousand larvæ and cocoons, and this figure alone will tell how they have multiplied in the northwestern part of this city since the year 1860 from the few worms of Dr. Thomas Stewardson's successful experiment. The female seems to favor trees near the open and along the road for depositing the eggs as most of the offspring are found there. It seems strange that the larvæ now at any stage are very little molested by birds, of which there is a variety, whereas at the beginning the Doctor lost quite a number this way. The larvæ, which feed gregariously in the first stages, are easily found on the underside of the leaf, but after the second moult, with no protection, will feed and moult on the same stem, and there can be little trouble for the sharp eye of the smallest insectivorous bird to find them. When taken by hand they will not fight like some larvæ of the Sphingidæ, nor discharge any fluid like the *Datana;* in fact, all they do is to stick to their foothold. In October I collected some cocoons and kept them in the room previous to sending a lot abroad when, to my dismay, nearly all the moths emerged and I found some mated shortly afterwards. Eggs hatched in fifteen days. The leaves of the Ailanthus only lasting up to the second moult I tried several Winter plants which were taken as a doubtful "free lunch" and a week after the last proper food-plant had disappeared the worms went to the happy hunting grounds. This lot makes the third generation this year. According to my observations their collecting in colonies seems habitual, except when feeding on *Liriodendron* and *Lindera benzoin.* The moth is an excellent dish for our screech owl (as I had the opportunity to observe) which may account for their scarcity in comparison to the number of cocoons. Many larvæ of *E. tityrus* have been collected on *Desmodium nudiflorum*, a food-plant new to me. *T. nicippe* has been very plentiful this season, and has apparently a different food-plant from *Cassia*, owing to the limited occurrence of this plant in our neighborhood.—H. HORNIG.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. ZOOLOGISCHER ANZEIGER. Leipsic, Nov. 2, 1896 —On the biology of the social wasps of Brazil, H. von Ihering.——November 23.—On the copulatory organs of the Lysiopetalidæ and a *Lysiopetalum* from Bosnia, Dr. C. Verhoeff, figs.

2. LA FEUILLE DES JEUNES NATURALISTES. Paris, Nov. 1, 1896.—Mimicry in insects (cont.), C. Oberthür.

3. LE NATURALISTE. Paris, Nov. 1, 1896.—Analytically illustrated genera of French Coleoptera (cont.), C. Houlbert, figs. Monographic essay on the Coleoptera of the genera *Lucanus* and *Pseudolucanus*, L. Planet, fig.

4. MEMOIRIE DELLA R. ACCADEMIA DELLA SCIENZE DELL'INSTITUTO DI BOLOGNA (v), iv, 1894. Received Nov. 24, 1896.—Report on the Hymenoptera collected in Mozambique by Cav. Fornasini, C. Emery, G. Gribodo and G. Kriechbaumer.

5. BOLLETINO DEI MUSEI DI ZOOLOGIA ED ANATOMIA COMPARATA DELLA R. UNIVERSITA DI TORINO. No. 254, Aug. 20, 1896.—Chilopods and Diplopods collected by Dr. E. Festa at La Guayra in Darien and at Cuenca, Dr. F. Silvestri, figs.——No. 256, Sept. 12, 1896.—Two anomalous Acrididæ, Dr. A. Griffini, figs.

6. IL NATURALISTA SICILIANO. Palermo, Nov. 1, 1896.—Regional catalogue of the Coleoptera of Sicily (cont.), E. Ragusa. Studies on the genera *Alaocyba*, *Torneuma* and *Amaurorrhinus* (concl.), J. Croissandeau. On the nidification and biology of *Sphex paludosus* Rossi, T. De Stefani.

7. THE BRAIN OF THE BEE.—A preliminary contribution to the morphology of the nervous system of the Arthropoda. By F. C. Kenyon. Reprint from Journal of Comparative Neurology, vi, 3, pp. 133–210, pls. xiv–xxii, December, 1896.

8. PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY OF LONDON (B), 186, pt. 2.—The pigments of the Pieridæ; a contribution to the study of excretory substances which function in ornament. By F. G. Hopkins.

9. BULLETIN DE LA SOCIETE NATIONALE D'ACCLIMATATION DE FRANCE. Paris, May, 1896.—Applied entomology in Europe, P. Marchal.

10. ATTI DELLA SOCIETA DEI NATURALISTI DI MODENA, serie 3, xiv, 1.—On a case of albinism in *Periplaneta orientalis* L., T. Bentivoglio.

11. ANNALI DEL MUSEO CIVICO DI STORIA NATURALE DI GENOVA, serie 2, xvi.—Travels of Leonardo Fea in Burmah and neighboring regions. Colydiidæ et Monotomidæ, A. Grouvelle; Languriidæ, Erotylidæ

and Endomychidæ, H. S. Gorham; Monommidæ, Trixagidæ et Eucnemidæ, E. Fleutiaux; the Diplopoda, F. Silvestri. Descriptions of new genera and species of Phytophagous Coleoptera obtained by Dr. Modigliani in Sumatra, M. Jacoby. New Termitophilæ and Termites from India, E. Wasmann. On the Odonate *Aeschna rileyi*, P. P. Calvert.

12. BULLETIN OF THE TORREY BOTANICAL CLUB. Lancaster, Pa., November, 1896. Resemblance of an insect larva [*Gossyparia ulmi* Geof.] to a lichen fruit, G. E. Stone.

13. MITTHEILUNGEN AUS DEM ROEMER MUSEUM. Hildesheim, No. 7, November, 1896.—System of North American Lepidoptera, A. R. Grote.

14. THE AMERICAN MONTHLY MICROSCOPICAL JOURNAL. Washington, November, 1896.—The Tsetse fly disease in Zululand (from the London Lancet).

15. TRAVAUX DE LA SOCIETE IMPERIALE DES NATURALISTES DE ST. PETERSBOURG, SECTION DE ZOOLOGIE ET DE PHYSIOLOGIE, xxvi, 1896. —Contributions to the knowledge of spermatogenesis of spiders, J. Wagner.

16. LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS.—Contributions to Biology from the Hopkins Seaside Laboratory vii, Palo Alto, Cal., 1896. New Mallophaga, ii, from land birds, together with an account of the Mallophagous mouth-parts, V. L. Kellogg, 14 pls. (Reprint from Proc. Calif. Acad. Sci. (2), vi).

17. PROCEEDINGS OF THE BOSTON SOCIETY OF NATURAL HISTORY, xxvii, September, 1896.—On the larvæ of the higher Bombyces (Agrotides Grote), H. G. Dyar.

18. SITZUNGSBERICHTE DER GESELLSCHAFT NATURFORSCHENDER FREUNDE ZU BERLIN, Oct. 20, 1896.—Formation of the wings in the larva of *Tenebrio molitor* L., R. Heymons, fig.

19. PROCEEDINGS OF THE NATURAL SCIENCE ASSOCIATION OF STATEN ISLAND [New Brighton, N. Y.]. Nov. 14, 1896.—Additions to the local list of butterflies, W. T. Davis.

20. PSYCHE. Cambridge, Mass., December, 1896.—Notes on the Winter insect fauna of Vigo County, Indiana—viii, W. S. Blatchley. Life-history of *Deilephila lineata*, C. G. Soule.

21. DE NEDERLANDSCHE INSECTEN door Dr. J. Th. Oudemans. Met 36 steendrukplaten en ruim driehonderd figuren in den tekst Aflevering 1, s'Gravenhage Martinus Nijhoff, 1896.—The first part (48 pp.) of a work on the insects of Holland, treating of the systematic place of insects, the idea of species, aberrations, races, etc., polymorphism, parthenogenesis and allied subjects, metamorphoses, galls, and a part of the external anatomy. Each part is to cost 90 Dutch (=37 American) cents.

22. THE AMERICAN NATURALIST. Philadelphia. December, 1896.—A new era in the study of Diptera, J. M. Aldrich. Color variation in a beetle (from Bateson in Jour. Roy. Micr. Soc.).

23. REVUE SCIENTIFIQUE. Paris, Nov. 21, 1896.—Reproduction and evolution of social wasps, P. Marchal.

24. BULLETINO DELLA SOCIETA ENTOMOLOGICA ITALIANA, xxviii, 1 and 2. Florence, Oct. 31, 1896.—Studies on the ants of the neotropical fauna, xvii-xxv, C. Emery, 1 pl. Systematic revision of the European species of the family Culicidæ (cont.), E. Ficalbi.

25. LE NATURALISTE CANADIEN. Chicoutimi (Prov. Quebec), November, 1896.—Popular entomology, G. Beaulieu. The Coleoptera of Manitoba, G. Chagnon.

26. EUROPAEISCHE HOEHLENFAUNA.—Eine Darstellung der in den Höhlen Europas lebenden Tierwelt mit besonderer Berücksichtigung der Höhlenfauna Krains. Nach eigenen Untersuchungen von Prof. Dr. Otto Hamann. Mit 150 Abbildungen auf fünf lithographischen Tafeln. Jena, Hermann Costenoble, 1896, 296 pp., 8vo. Insecta, pp. 53–160, 257–260; Myriapoda, pp. 160–180; Arachnida, pp. 181–224.

27. EXPERIMENT STATION RECORD, viii, 1 and 2, U. S. Department of Agriculture. Washington, 1896.—Summaries and notices of entomological articles from various experiment station records.

28. ANATOMISCHER ANZEIGER. Jena, Nov. 12, 1896.—A [contribution] to the knowledge of the dermal nervous system of the Arthropoda, E. Holmgren, figs.

29. ICONES ORNITHOPTERORUM: A monograph of the Rhopalocerous genus Ornithoptera, or bird-wing butterflies. By Robert H. F. Rippon. Published by the author, 24 Jasper Road, Upper Norwood, S. E. Part 8. Received Dec. 8, 1896. Genera *Drurya* and *Schoenbergia*, pls. 11, iv, 21*a*.

30. THE ENTOMOLOGIST'S RECORD. London, Nov. 15, 1896.—The antennæ of Lepidoptera (cont), J. W. Tutt.

31. ENTOMOLOGISCHE NACHRICHTEN, xxii, 21. Berlin, November, 1896.—Some new Cetonidæ, Dr. G. Schoch. *Distomum* cysts in dragonflies (from Blätter für Aquarien-und Terrarien Freunde, vii, pp. 199–200, 1896, W. Weltner).

32. SPECIES DES HYMENOPTERES D'EUROPE ET D'ALGERIE . . . fondé par Ed. André . . . et continué sous la direction scientifique de Ernest André. Supplement, pp. 705–736, and index, pp. 737–751, to vol. vi—Chrysididæ. Paris, Vve Dubrosclard, Editeur, 1896.

33. THE CANADIAN ENTOMOLOGIST. London, Ont., December, 1896. —The *Agrotis subgothica* of Haworth again, M. V. Slingerland, 1 pl. Further additions to my 1894 list of Winnipeg butterflies, with notes for season of 1896, A. W. Hanham. A reply to Prof. Smith, A. R. Grote. A Mexican *Aleurodicus*, T. D. A. Cockerell Notes on the phylogeny of the Saturnians, H. G. Dyar. Description of two remarkable aberrations of *Colias philodice*, D. Brainerd. Notes on the life-history of *Cerura occidentalis*, H. G. Dyar.

34. THE ENTOMOLOGIST'S MONTHLY MAGAZINE. London, December, 1896.—Survival of *Acherontia atropos* after being struck by an ichneumon, Rev. T. A. Marshall. Ravages of Termites ("white ants") at Sydney, N. S. W., R. McLachlan.

35. JOURNAL OF THE INSTITUTE OF JAMAICA, ii, 3. Kingston, July, 1896.—A contribution towards a list of the dragonflies of Jamaica, G. H. Carpenter. The scorpions of Jamaica, J. E. Duerden. The Myriapods of Jamaica, id.

36. THE VICTORIAN NATURALIST. Melbourne, October, 1896.—Notes on an entomological fungus, W. H. F. Hill.

37. THE JOURNAL OF THE QUEKETT MICROSCOPICAL CLUB. London, November, 1896.—Note on a stridulating organ in a South African ant (*Streblognathus æthiopicus*), R. T. Lewis, 1 pl. Notes on aquatic Hymenoptera and rediscovery of *Prestwichia aquatica* Lubbock, F. Enock.

38. ZOOLOGISCHE JAHRBUCHER, ix, 5. Jena, Nov. 15, 1896.—Formicidæ collected in Paraguay by Dr. J. Bohls, C. Emery, figs.

39. BULLETIN FROM THE LABORATORIES OF NATURAL HISTORY OF THE STATE UNIVERSITY OF IOWA, iv, 1. Iowa City, December, 1896.—Notes on the Hymenoptera collected by the Bahama Expedition from the State University of Iowa, W. H. Ashmead.

40. TRANSACTIONS OF THE AMERICAN PHILOSOPHICAL SOCIETY (new series), xix, 1. Philadelphia, 1896.—An essay on the development of the mouth parts of certain insects, J. B. Smith, 3 pls.

41. BULLETIN No. xxiii, DELAWARE COLLEGE AGRICULTURAL EXPERIMENT STATION. Newark, Del., 1896.—The increase of the San José scale in Delaware during 1896, G. H. Powell.

42. BIBLIOGRAPHY OF THE MORE IMPORTANT CONTRIBUTIONS TO AMERICAN ECONOMIC ENTOMOLOGY. Prepared by authority of the Secretary of Agriculture by Samuel Henshaw. Part v.—The more important writings of Government and State entomologists and of other contributors to the literature of American economic entomology, L—Z. U. S. Department of Agriculture, Division of Entomology. Washington, 1896, 179 pp.

43. THE ENTOMOLOGIST. London, December, 1896.—The senses of insects, J. Arkle. On the preponderating influence of the organic over the physical environment in determining the vertical distribution of the Lepidoptera, W. H. Bath. The aberrations of secondary sexual characters in Papilionidæ, J. Watson. Silk-producing Lepidoptera (cont.), A. Wailly. *Vanessa antiopa*, H. J. Elwes. On preserving spiders, B. Piffard. Apple trees and wingless females, A. T. Mitchell. Entomologist *vs.* collector, G. W. Smith, F. P. Bedford.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding list, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

THE GENERAL SUBJECT.

Oberthür 2, Kenyon 7, Hopkins 8, Bentivoglio 10, Wasmann 11, Stone 12, Oudemans 21, Beaulieu 25, Hamann 26, Holmgren 28, Hill 36, Smith 40, Arkle 43, Smith 43, Bedford 43.

ECONOMIC ENTOMOLOGY.

Marchal 9, Anon. 14, McLachlan 34, Hill 36, Powell 41, Henshaw 42, Mitchell 43.

MYRIAPODA.

Silvestri 5*, 11, Verhoeff 1, Duerden 35.

ARACHNIDA.

Wagner 15, Duerden 35, Piffard 43.

ORTHOPTERA.

Griffini 5, Bentivoglio 10.

NEUROPTERA.

Wasmann 11, Calvert 11, Kellogg 16, Weltner 31, McLachlan 34, Carpenter 35.

HEMIPTERA.

Cockerell 33*.

COLEOPTERA.

Houlbert 3, Planet 3, Ragusa 6, Croissandeau 6, Grouvelle 11, Gorham 11, Fletiaux 11, Jacoby 11, Stone 12, Heymons 18, Blatchley 20, Bateson 22, Chagnon 25, Schoch 31*.

DIPTERA.

Anon. 14, Aldrich 22, Ficalbi 24.

LEPIDOPTERA.

Hopkins 8, Grote 13, Dyar 17, Davis 19, Soule 20, Rippon 29, Tutt 30, Slingerland 33, Hanham 33, Grote 33, Dyar 33 (two), Brainerd 33, Marshall 34, Bath 43, Watson 43, Wailly 43, Elwes 43.

HYMENOPTERA.

von Ihering 1, Emery, Gribodo and Kriechbaumer 4, De Stefani 6, Kenyon 7, Marchal 23, Emery 24*, 38, André 32, Lewis 37, Enock 37, Ashmead 39*.

Doings of Societies.

PHILADELPHIA, December 8, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street. Members present: Messrs. Castle, Boerner, H. W. Wenzel, F.

Hoyer, E. Wenzel, A. Hoyer, Johnson, Fox and Schmitz. Honorary members: Drs. Henry Skinner and John B. Smith. Visitors: Messrs. A. Klages and Lancaster Thomas. Meeting called to order at 8.50 P.M., Vice-president Castle presiding.

Prof. Smith stated that about a year ago he had found Coccinellidæ, *Pentilia misella* very abundant at Riverton, N. J., and that recently he had been notified by the farmers of Monmouth County, New Jersey, that fruit trees in their orchards were infested by a small black beetle. On visiting the district from whence this complaint came, a few days ago, he found the trees swarming with these insects, a number of which he exhibited, feeding upon the San José scale; the speaker remarked that this was an example of how nature takes care of itself, as wherever the trees are infested by this scale you will be sure to find the insects in great numbers.

Referring to the above Mr. H. W. Wenzel stated that he had taken several of the same species on the oak at Anglesea, N. J.

Prof. Smith also exhibited a piece of *Yucca whipplei* of about one foot in length and three inches in diameter, which came from the desert of California. These trees, which bear a white flower, grow to a height of about twenty feet and a diameter of one foot, are quite numerous in the desert regions; the entomologists of California cut and dry this, using it for mounting specimens upon, for which purpose it seems very suitable it being of a pithy, nature and quite dense, it must, however, be thoroughly dried first, otherwise it is apt to corrode the pins.

Dr. Skinner supplemented that it was also coming in use among surgeons, who use it for splints and other purposes.

Mr. Johnson exhibited a number of Diptera, among which he mentioned a male and female of the genus *Dialysis*, a new species, which Mr. Wenzel had captured at Cranberry, in the mountains of North Carolina.

No further business being presented the meeting adjourned to the annex at 10.30 P.M. THEO. H. SCHMITZ, *Secretary*.

NEWARK ENTOMOLOGICAL SOCIETY.—At a meeting held October 25th the general character of the season just passed was discussed, and particularly the occurrence of certain of the rarer species.

Among others, Mr. H. H. Brehme mentioned that the collecting started earlier in 1896 than at any other period for nine years. The first eggs of *Sphinx luscitiosa* were found May 19th, earlier than ever before; that is, eggs were found on that day; and on the 20th 250 eggs and between 30 and 40 young larvæ at least three days' old were discovered. As the eggs are laid about ten days before the larvæ hatch, the first adult must have been flying not later than May 7th, which is unusually early for any *Sphinx*. Eggs were found until June 29th, so it is certain that not all the

moths come out at the same time. About eleven hundred of this species were found, and the larvæ were carried through until nearly full grown, when, being put in a cellar for a week, they became ill and died rapidly and not more than 200 entered the pupa state.

Smerinthus geminatus is a much earlier species, and eggs were found May 1st. Full grown larvæ were ready to pupate May 30th; but of 30 specimens that pupated early in June, only one specimen hatched, the others lying over for next year. Some larvæ were found June 30th, and all of those produced the moths during the current Summer. Mr. Brehme questioned whether this was a rule. The first eggs of *S. myops* were found May 20th, and they soon became plentiful. The last larvæ were seen October 12th. *Cressonia juglandis* was very abundant this year, and much earlier than in other seasons. The first eggs were found May 20th. One day in August Messrs. Angelman and Brehme found over 300 full grown larvæ The last larvæ were found September 20th.

After considerable discussion on the subject of broods and dates, Mr. S. Seib told of an experience in involuntary sugaring, October 21st. He had several boxes of honey comb from which the honey had been extracted and placed them in his garden to allow the bees to clean them out completely. In taking them in, in the evening, he noticed that there were several Noctuids flying about, and also that some had crawled in between the combs and were not easily disturbed. He therefore took in box after box, collected out the specimens in the room, and replaced them outside for future attractions. In this way a considerable number of specimens were taken by far the greater proportion of them being *Leucania unipunctata*. In the genus *Agrotis* there were many common species and some that are as yet unknown to him. *Scopelosoma* was also represented in the captures, and particularly *sidus*, which was present in several pretty varieties.

November 21st. Meeting was held at the residence of Mr. Seib in Jersey City. Mr. H. H. Brehme introduced the discussions in a short paper on southern butterflies noted in the vicinity of Newark, June 30th. *Papilio ajax* variety *marcellus*, was taken near Hemlock Falls in rather bad condition, indicating a long flight. July 10th, near Elizabeth. *Eupotieta claudia* was taken in some numbers, and also a specimen of *Pyrgus tessellatus*. On the same day was seen a specimen of *Callidryas eubule*. One day in September, near Waverly, a specimen of *Terias nicippe* was taken—a very rare species in this vicinity. Incidentally, it was stated that a correspondent in Reno, Nevada, claims that the common white cabbage butterfly, *Pieris rapæ*, is driving out the native species *vernalis beckeri* and *occidentalis*. The subject of the distribution of species and their general modification

was discussed at some length, Messrs. Frank, Doll, Smith, Seib and others taking part.

This was followed by some discussions on the habits of dung beetles, particularly the so-called tumble bugs, in the course of which Mr. Seib read an article from a German publication detailing at length some observations as to the method in which the insects formed and disposed of the pellet they are so often seen trundling about.

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

NITELOPTERUS, A NEW LARRID GENUS.

By WILLIAM H. ASHMEAD.

Among a small but interesting collection of parasitic Hymenoptera sent me some time ago by Mrs. Annie T. Slosson, for names, was a minute digger-wasp, taken by her last Winter at Lake Worth, Florida, representing a new genus in the family Larridæ, although evidently closely allied to the European genus *Nitela* Latreille.

Our species in this family have only quite recently been monographed by Mr. Wm. J. Fox, and I therefore think it best that there should be no delay in publishing a diagnosis of this interesting new genus.

Nitelopterus g. n. ♂.—Head transverse, with the eyes large and occupying the whole side of the head, extending to base of mandibles; maxillary palpi 5-jointed; labral palpi 3-jointed; mandibles long lanceolate; acute at tips, but with a deep emargination on lower side before the middle; ocelli distinct, triangularly arranged. Thorax with a pronotum a little longer, but narrower than the mesonotum, with a transverse constriction or furrow above at about two-thirds its length; mesonotum broader than long, obtrapezoidal, without parapsidal furrows, but with a shallow, poorly-defined, median furrow, which is more especially noticeable anteriorly; scutellum with a transverse grooved line at base; metanotum as long as the mesonotum and scutellum united, slightly narrowed towards apex, the hind angles rounded, the short oblique posterior face transversely striated, with a slight sulcus; spiracles linear; tibial spurs 1, 1, 2, the tarsi longer than their femora. Front wings with one submarginal and two discoidal cells, the submedian cell considerably shorter than the me-

dian, the areolet or second submarginal cell obliterated, evidently by the union of the two transverse cubital nervures as the only one now present is somewhat stout; the cubitus is indicated by a stump of a vein which is shorter than the transverse cubitus; marginal cell shorter than the first submarginal cell, slightly rounded at apex, but not appendiculated, about two and one-half times as long as wide. Abdomen oblong-oval, narrower than the thorax, with seven distinct segments; segments 1-3 occupying most of the surface, the first the longest, the second and third subequal; segments 4–7 united, not longer than the third.

In venation and general appearance this new genus is not unlike *Nitela* Latr., and will naturally, on account of the venation of front wings, come next to it in any natural arrangement of the genera of the Larridæ; but is readily separated by the strongly emarginated mandibles, the slight difference in size and shape of the marginal cell and by the cubitus in the hind wing originating somewhat farther away from the transverse median nervure.

Nitelopterus slossonæ sp. n. ♂.—Length 3.5 mm. Black, more or less clothed with a silvery pile, the head in front and thorax above bronzed; clypeus and face below insertion of antennæ clothed with a dense, silvery pubescence; scape beneath, mandibles, tibiæ and tarsi, ferruginous; anterior and middle tibiæ on upper surface more or less dusky; apex of tarsal joints armed with black spines; flagellum filiform, joints 1–7 subequal 4 and 5 distinctly longer than 1 and 2, or about four times as long as thick. Abdomen with segments 1–¼ banded with silvery pile on apical margins, less distinct on the following segments; the segments 1 and 2 have also a more or less distinct testaceous spot at apical middle.

Hab.—Lake Worth, Florida. (Mrs. Annie T. Slosson).

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SOME SPECIES OF PERDITA FROM NEBRASKA.

By T. D. A. Cockerell, N. M. Agr. Exp. Station.

So far as I am aware, no species of *Perdita* has ever been recorded from Nebraska, so the following account of some just received from Prof. L. Bruner will possess interest.

(1). **Perdita albipennis** Cresson, 1868.—Sand Hills, Neb., July. Both sexes.

(2). **Perdita bruneri** n. sp. West Point, Neb., August, 1887. One of each sex, ♂.—About 6 mm. long. Head and thorax dark olive-green, dullish, with bright lemon-yellow markings. Face bare, vertex, cheeks and thoracic dorsum with the usual sparse pubescence, becoming dense and conspicuously white on lower part of cheeks and lower part of pleura. Head ordinary, cheeks unarmed. Face below level of antennæ all yellow, except clypeal dots, and a black streak at junction of dog-ear mark with

clypeus. Clypeus rather high; supraclypeal mark rectangular, nearly square, very slightly broader than long, emarginate at top. Lateral marks rapidly and evenly narrowing from top of dog-ear marks to a point on orbital margin about level with the middle of the scape, forming thereat an angle of about 45°. Cheeks dark with only a yellow line extending nearly half way up posterior orbital margin. Mandibles rufous at tips. Scape yellow with a black patch on distal half above. Flagellum black above, mostly dull yellowish below. Mesothorax dullish, microscopically tessellate, median groove very distinct. Tubercles and a pair of large spots on hind border of prothorax, connecting with them by a narrow line, yellow. A patch on border of prothorax below tubercles also yellow. Pleura wholly dark, metathorax distinctly bluish. Tegulæ hyaline with a yellow spot. Wings hyaline, nervures and margin of stigma very pale chrome yellow. Marginal cell somewhat obliquely truncate, poststigmatal portion longest. Second submarginal large, narrowed one-half to marginal. Third discoidal distinct. Legs yellow, with dark brown markings. Femora for the most part dark brown beneath. Anterior and middle tibiæ with a dark streak behind, hind tibiæ almost entirely brown, except a yellow line down the front. Tarsi becoming whitish, claws dark. Abdomen above dark brown, with five clean cut yellow bands, all narrowly interrupted in the middle. These bands do not coalesce on lateral margin. Venter yellow.

♀.—About 6 mm. long, if anything smaller than the ♂, the thorax distinctly smaller, no dog-ear marks. The yellow markings apparently somewhat reddened by cyanide in the specimen described. Clypeus yellow with the usual dots and two heavy black bars. Supraclypeal mark nearly twice as broad as long. Lateral marks receding from the clypeus opposite the dot, curving gently upwards and outwards, then passing along the orbital margin as a band of uniform width, abruptly truncate at the upper level of the antennal sockets. Mandibles with slender dark tips. Scape more slender than in ♂. Prothoracic spots reduced to short lines or bands. Margin of stigma very pale orange contrasting with the very pale brownish nervures. Femora dark except at apex, middle and hind tarsi brownish. Abdomen banded as in the ♂, but the bands not so broad, and chrome instead of lemon-yellow. Venter dark brown.

In my table of *Perdita* (Proc. Phila. Acad. 1896), the ♁ *bruneri* runs at once to *sphæralceæ* ♁, from which it differs by the interrupted abdominal bands, the comparatively dull mesothorax, etc. The ♀ runs down to 80 *affinis* ♀ variety, but differs at once from that which has cream-colored markings, dark nervures, and no well-developed supraclypeal mark.

(3). **Perdita sexmaculata** Ckll. 1895, var. *punctata*, Ckll., 1896. Lincoln, Nebr., September, one ♀.

(4). **Perdita ignota** Ckll., 1896. Lincoln, Neb., September, one ♀. The head and thorax have a decided olive-green color, but otherwise the specimen agrees with *ignota* from Mesilla, N. M. The occurrence of the species in Nebraska was wholly unexpected.

The above species are all Rocky Mountain types, representative of the upper Sonoran and Transition zones.

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